Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1.-6. (Cancelled)

7. (Currently Amended) A method for producing a semiconductor laser device comprising the steps of:

forming a semiconductor multilayer structure on a semiconductor substrate of a first conductivity type, the semiconductor multilayer structure including: a cladding layer of the first conductivity type; an active layer having a super-lattice structure; a first cladding layer of a second conductivity type; an etching stop layer of the second conductivity type; a second cladding layer of the second conductivity type; a band graded layer of the second conductivity type; and an impurity supply control layer;

disordering the active layer by diffusing an impurity at least through the impurity supply control layer at least in a predetermined region within the semiconductor multilayer structure; and

patterning the second cladding layer into a ridge structure by wet etching,

wherein a concentration of the impurity diffused in the etching stop layer within the predetermined region is greater than a concentration of the impurity outside the predetermined region and equal to or smaller than about 2×10^{18} cm^{-3}.

8. (Original) A method according to claim 7,

wherein the semiconductor substrate comprises a compound semiconductor material containing GaAs of the first conductivity type as a main component;

the cladding layer of the first conductivity type comprises a compound semiconductor material containing GaP of the first conductivity type as a main component;

the active layer comprises a compound semiconductor material containing GaP as a main component;

the first cladding layer, the etching stop layer, the second cladding layer, and the band graded layer each comprise a compound semiconductor material containing GaP of the second conductivity type as a main component; and

the impurity supply control layer comprises a compound semiconductor material containing GaAs as a main component.

9. (Original) A method according to claim 7,

wherein the semiconductor substrate comprises GaAs of the first conductivity type;

the cladding layer of the first conductivity type comprises AlGaInP of the first conductivity type;

the active layer includes a super-lattice structure comprising AlGaInP and GaInP;

the first cladding layer and the second cladding layer each comprise AlGaInP of the second conductivity type;

the etching stop layer comprises GaInP of the second conductivity type;

the band graded layer comprises GaInP of the second conductivity type; and

the impurity supply control layer comprises GaAs.

10. (Original) A method according to claim 7, wherein the impurity supply control layer has a thickness equal to or greater than about 100 Å.

11. (Original) A method according to claim 7,

wherein a concentration gradient of the impurity diffused in the second cladding layer within the predetermined region, taken along a normal direction to the substrate from an upper face toward a bottom face of the substrate, is greater than a concentration gradient of the impurity outside the predetermined region along the normal direction to the substrate, and is equal to or smaller than about 2×10^{18} cm^{-3} μm^{-1}.

12. (Original) A method according to claim 7, wherein a concentration of the impurity diffused in the active layer within the predetermined region is greater than a concentration of the impurity outside the predetermined region, and is equal to or smaller than about 2×10^{18} cm^{-3}.

13. (Original) A method according to claim 8, wherein the impurity is Zn.

14. (New) A method according to claim 7, further comprising a step of removing the impurity supply control layer after diffusing the impurity, wherein after removing the impurity supply control layer, the second cladding layer of the second conductivity type is patterned into a ridge structure by wet etching.